

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027578**Date Inspected:** 09-May-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Fred Von Hoff and Bernie Docena			CWI Present:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A

Bridge No: 34-0006**Component:** SAS Tower**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Base 13 meter outer East external diaphragm, QA randomly observed ABF/JV qualified welder Xiao Jian Wan continuing to perform Partial Joint Penetration (PJP) T-joint welding fill pass on 80mm thick shear plate to 45mm thick diaphragm plate weld joint #W102. The welder was observed welding in the 2G (horizontal) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. The welder was using a track mounted welder holder assembly that was remotely controlled. The PJP T-joint was preheated to greater than 325 degrees Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blankets located on top of the plate prior welding. During welding, ABF Quality Control (QC) Fred Von Hoff was noted monitoring the welding parameters of the welder. Measured welding parameters during welding were 240 amperes, 23.5 volts and 325mm travel speed. Calculated heat input was 1.04 Kjoules/mm which appears in compliance to the contract requirements. At the end of the shift, FCAW-G fill pass welding was still continuing and should remain tomorrow. The welder held the preheat using the same Miller Proheat 35 Heating System for three hours after welding as required.

At Tower Base 9 meter outer East external diaphragm, this QA Inspector randomly observed ABF personnel Richard Garcia continuing to perform 4F (overhead position) fillet production welding on the C10 channel to 45mm thick diaphragm plate fillet weld joint W098. The welder was noted welding 6mm fillet between one side

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of the channel top flange and diaphragm plate per detail 1 of the ZPMC drawing number FW3. The welder was using the 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. This QA Inspector observed ABF personnel using propylene gas torch to preheat the plates being welded prior welding. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F. This QA Inspector performed a verification of the welding parameters and observed 130 amperes on the 3.2mm diameter electrode. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-F1200A. At the end of the shift, the welder has completed the 6mm fillet weld on North side of the outer West diaphragm.

At Tower Base outer West shear plate, this QA randomly observed ABF welder Jin Pei Wang perform 2F/3F (horizontal/vertical) position tack welding temporary attachments to the 100/80mm plate transitioned shear plate. The welder was using SMAW with 3.2mm diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. The outer West shear plate was preheated to more than 225°F using propylene gas torch prior welding. The temporary attachments are being welded as an aid in erecting temporary platform for personnel access in welding the Partial Joint Penetration T-joint W110. During the shift, ABF QC Bernie Docena was noted monitoring the welder. The welder has completed six temporary attachments and erected their temporary working platform.

At Tower Base ED1-29 shear plate assembly, ABF QC Bernie Docena informed this QA that the 60mm thick bearing plate replacement that was brought to site was wrong. Upon cursory verification, the tapered side of the bearing stiffener was beveled to 45 degree while the straight portion of the plate which was to be beveled and welded to the bearing plate was noted flat (no bevel).

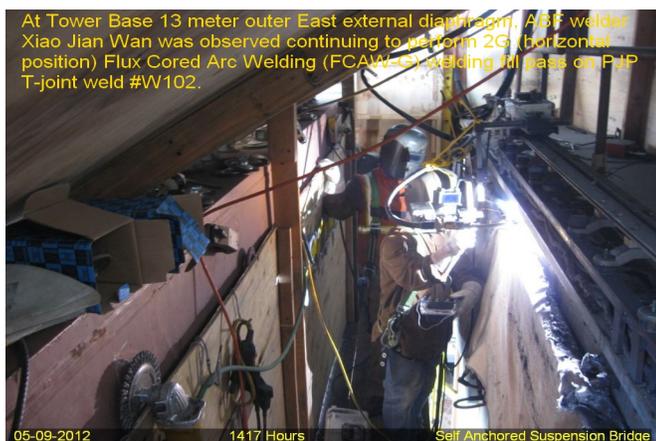
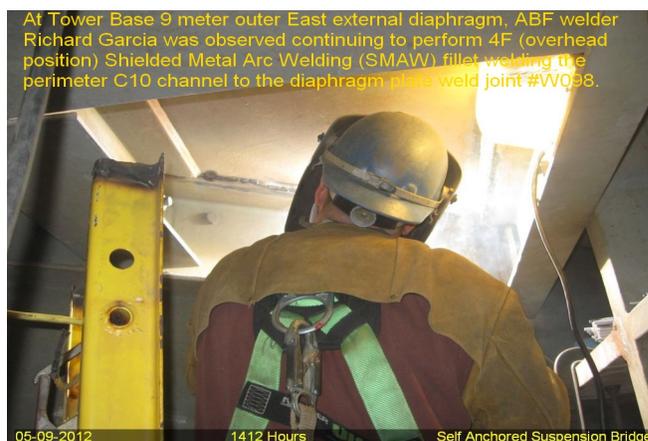
At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the Partial Joint Penetration (PJP) T-joint weld joints on twelve (12) diaphragm plate to shear and five (5) corner stiffener plates. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector at 13 meter diaphragm meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. 13 meter diaphragm PJP T-joint #W101 – weld cover QA verified
2. 13 meter diaphragm PJP T-joint #W103 – weld cover QA verified
3. 13 meter diaphragm PJP T-joint #W104 – weld cover QA verified
4. 13 meter diaphragm PJP T-joint #W105 – weld cover QA verified
5. 13 meter diaphragm PJP T-joint #W106 – weld cover QA verified
6. 13 meter diaphragm PJP T-joint #W107 – weld cover QA verified
7. 13 meter diaphragm PJP T-joint #W108 – weld cover QA verified
8. 13 meter diaphragm PJP T-joint #W109 – weld cover QA verified
9. 13 meter diaphragm PJP T-joint #W112 – weld cover QA verified
10. 13 meter diaphragm PJP T-joint #W113 – weld cover QA verified
11. 13 meter diaphragm PJP T-joint #W114 – weld cover QA verified
12. 13 meter diaphragm PJP T-joint #W115 – weld cover QA verified
13. 13 meter diaphragm corner stiffener PJP T-joint #W137-2 – weld cover QA verified
14. 13 meter diaphragm corner stiffener PJP T-joint #W138-2 – weld cover QA verified

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15. 13 meter diaphragm corner stiffener PJP T-joint #W138-1 – weld cover QA verified
16. 13 meter diaphragm corner stiffener PJP T-joint #W138-8 – weld cover QA verified
17. 13 meter diaphragm corner stiffener PJP T-joint #W138-7 – weld cover QA verified
18. OBG 6E-PP46.5-E5 LSE longitudinal stiffener butt joint - weld cover QA verified
19. OBG 6E-PP46.5-E5 LSW longitudinal stiffener butt joint - weld cover QA verified
20. OBG 6E-PP46.5-E5 TS transverse stiffener butt joint - weld cover QA verified



Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer